REMARKS/ARGUMENTS

Status of Claims

Claims 1, 2, 4, 5, 20, 24 to 26, 46, 47 and 53 to 73 have been maintained in the application.

Claim Amendments

Claim 1 has been amended to include the limitation "inserted for at least one antenna in a grouping of at least one subcarrier of the plurality of sub-carriers for all OFDM symbols of the respective sequence of OFDM symbols".

Claims 4, 5, 20, 26, 57, 58 and 63 have been amended to replace the expression "four antennas" with "four transmit antennas".

Claim 24 has been amended to recite:

> The method of claim 1 wherein the pilots inserted for at least one antenna in a grouping of at least one subcarrier of the plurality of sub-carriers for all OFDM symbols of the respective sequence of OFDM symbols comprise pilots for each of the four transmit antennas, a grouping for each antenna comprising at least one subcarrier of the plurality of sub-carriers for all OFDM symbols of the respective sequence of OFDM symbols.

Claim 25 has been amended to recite:

> The method of claim 1 wherein the pilots inserted for at least one antenna in a grouping of at least one subcarrier of the plurality of sub-carriers for all OFDM symbols of the respective sequence of OFDM symbols comprise pilots for pairs of two transmit antennas of the four transmit antennas, a grouping for each pair of antennas comprising at least one subcarrier of the plurality of sub-carriers for all OFDM symbols of the respective sequence of OFDM symbols.

Claim 26 has been amended to include the word "claim" in the preamble.

In claim 54, the expression "the four transmit" has been included prior to the word "antennas" at the end of the claim.

In claim 55, the word "pairs" has been replaced with "pair".

The word "comprising" has been deleted prior to the expression "each comprising a first, second…".

In claim 59, the word "any" has been deleted.

In claim 64, a comma has been deleted from the preamble subsequent to the word "given" and the word "pilot" has been replaced with "pilots".

Claim 65 has been amended to recite:

> The method of claim 1 ~~wherein~~further comprising turning off two transmit antennas ~~can be turned off~~ and re-assigning pilot groups assigned to the turned off antennas ~~re-assigned~~ to the remaining two transmit antennas to improve the channel estimation performance for fast frequency selective fading channel,

wherein added text has been underlined and deleted text has been struckthrough.

35 U.S.C. § 112 Rejections

The Examiner has rejected claims 1, 2, 4, 5, 20, 24 to 26, 46, 47 and 53 to 73 under 35 U.S.C. 112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention.

In particular the Examiner indicates that it is unclear whether or not "the four antennas" recited on line 5 in claim 1 are related to the "four transmit antennas" recited in the preamble of claim 1.

Claim 1 and other dependent claims have been amended as discussed above, to replace the expression "four antennas" with the expression "four transmit antennas".

Applicant respectfully requests the Examiner to reconsider and withdraw the rejection under 35 U.S.C. 112, second paragraph.

Claims not Identified as Rejected or Allowed

Applicant brings to the attention of the Examiner that claims 58, 62, 63 and 65 are neither rejected based on cited art nor indicated to be allowable, if the rejection under 35 U.S.C. 112, second paragraph is addressed. The Examiner has not indicated the status of these claims other than rejected based upon 35 U.S.C. 112, second paragraph.

35 U.S.C. § 102 Rejections

Controlling case law has frequently addressed rejections under 35 U.S.C. § 102. "For a prior art reference to anticipate in terms of 35 U.S.C. Section 102, **every element** of the claimed invention **must** be **identically** shown in a single reference." Diversitech Corp. v. Century Steps, Inc., 850 F.2d 675, 677, 7 U.S.P.Q.2d 1315, 1317 (Fed. Cir. 1988; emphasis added). The disclosed elements must be arranged as in the claim under review. See Lindemann Machinefabrik v. American Hoist & Derrick Co., 730 F.2d 1452, 1458, 221 U.S.P.Q. 481, 485 (Fed. Cir. 1984). If any claim, element, or step is absent from the reference that is being relied upon, there is **no** anticipation. Kloster Speedsteel AB v. Crucible, Inc., 793 F.2d 1565, 230 U.S.P.Q. 81 (Fed. Cir. 1986; emphasis added). The following analysis of the present rejections is respectfully offered with guidance from the foregoing controlling case law decisions.

The Examiner has rejected claims 1, 2, 4, 5, 20, 24 to 26, 46, 53 to 57, 59 to 61 and 69 to 72 under 35 U.S.C. 102(e) as being anticipated by Ma et al. (US Patent Application Publication No. 2003/0072254).

Claim 1 has been amended as described above to include the limitation that pilots are "inserted for at least one antenna in a grouping of at least one subcarrier of the plurality of sub-carriers for all OFDM symbols of the respective sequence of OFDM symbols". Applicant submits that the Examiner has not shown that Ma et al. discloses this limitation and as this is the case, Ma et al. cannot be considered to anticipate claim 1.

Claims 2, 4, 5, 20, 24 to 26, 46, 53 to 57, 59 to 61 and 69 to 72 are dependent upon claim 1, either directly or indirectly. For at least their dependence upon claim 1, Applicant submits that claims 2, 4, 5, 20, 24 to 26, 46, 53 to 57, 59 to 61 and 69 to 72 are novel over Ma et al.

Applicant respectfully requests that the Examiner reconsider and withdraw the 35 U.S.C 102(e) rejection of claims 1, 2, 4, 5, 20, 24 to 26, 46, 53 to 57, 59 to 61 and 69 to 72.

35 U.S.C. 103 Rejections

In rejecting claims under 35 U.S.C. § 103(a), the Examiner bears the initial burden of establishing a *prima facie* case of obviousness. *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992). *See also In re Piasecki*, 745 F.2d 1468, 1472 (Fed. Cir. 1984). It is incumbent upon the Examiner to establish a factual basis to support the legal conclusion of obviousness. *See In re Fine*, 837 F.2d, 1071, 1073 (Fed. Cir. 1988). In so doing, the Examiner is expected to make the factual determinations set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966), *viz.*, (1) the scope and content of the prior art; (2) the differences between the prior art and the claims at issue; and (3) the level of ordinary skill in the art. The Graham factors, including secondary considerations when present, are the controlling inquiries in any obviousness analysis. Once the findings of fact are articulated, Office personnel must provide an explanation to support an obviousness rejection under 35 U.S.C. 103. *KSR Int'l. Co. v. Teleflex Inc.*,127 S.Ct. 1727, 1741 (2007). According to *KSR*, for the Patent Office to properly combine references in support of an obviousness rejection, the Patent Office must identify a reason why a person of ordinary skill in the art would have sought to combine the respective teachings of the applied references. Only if this initial burden is met does the burden of coming forward with evidence or argument shift to the appellant. *See Oetiker*, 977 F.2d at 1445. *See also Piasecki*, 745 F.2d at 1472. Obviousness is then determined on the basis of the evidence as a whole and the relative persuasiveness of the arguments. *See Oetiker*, 977 F.2d at 1445; *Piasecki*, 745 F.2d at 1472.

Applicant's analysis below demonstrates that the Examiner has failed to properly conform to the aforementioned guidelines for a finding of obviousness under 35 U.S.C. 103.

The Examiner has rejected claims 47, 64, 66 to 68 and 73 under 35 U.S.C. 103(a) as allegedly being unpatentable over Ma et al. and further in view of Ma et al. (US Patent Application Publication No. 2003/0072255). Applicant submits that at least since the Ma et al. reference being cited for anticipation, and now for obviousness, is being cited via 35 U.S.C. 102(e), then the obviousness rejection must be made via 35 U.S.C. 103(c), not 35. U.S.C. 103(a), as alleged by the Examiner.

The Examiner has failed to establish a prima facie obviousness rejection against the identified claims because both of the Ma et al. references are not citable prior art. The Ma et al. references are not prior art because the Ma et al. references qualify for the exception under 35 U.S.C. 103(c)1, which provides:

> Subject matter developed by another person, which qualifies as prior art only under one or more of subsections (e), (f), and (g) of **section 102** of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the claimed invention was made, owned by the same person or subject to an obligation of assignment to the same person.

Both of the Ma et al. references have a publication date of April 17, 2003, and a filing date of January 8, 2002. Thus the Ma et al. references qualify as a reference under 35 U.S.C. 102(e). Applicant submits that the present application (U.S. Patent Application No. 10/593,053) and both Ma et al. references were, at the time the invention of the present application was made, owned by Nortel Networks Limited. This statement alone, in combination with the present facts, are sufficient evidence to disqualify the Ma et al. references from being used in a rejection under 35 U.S.C. **103(c)** (*See* MPEP 706.02(l)(2)). Applicant respectfully requests that the 35 U.S.C. 103 rejection of the identified claims be withdrawn.

In addition to the above statement Applicant also provided the following assignment particulars regarding the present application and Ma et al. references. The assignment pertaining to the 2003/0072254 was recorded at Reel/Frame: 012763/0796 on April 5, 2002. The assignment pertaining to the 2003/0072255 was recorded at Reel/Frame: 012773/0956 on

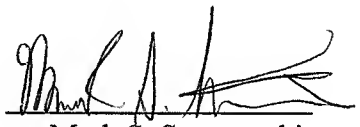
April 5, 2002. The assignment for the present application was at Reel/Frame: 018328/0178 on September 29, 2006.

Applicant respectfully requests the Examiner reconsider and withdraw the obviousness rejection of claims 47, 64, 66 to 68 and 73.

In view of the foregoing, early favourable consideration of this application is earnestly solicited.

Respectfully submitted,

JIANGLEI MA, ET AL.

By 

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